CIVIL EXPERTS
ISO 9001:2015
CONSULTANTS & TESTING CENTER

Highway / Building Material Testing | Structural Strengthening Solutions
Quality Control / Assurance / Audit | Proof Checking (Structural Designs & Drawings)
Soil Stabilization and Shoring Services | Non - Destructive Testing

Job No: CEC/IV/NCC/QC/2030-31 Date: 13.03.2031

TEST RESULTS OF PHYSICAL PROPERTIES OF REINFORCEMENT STEEL

Client : **Bruhath Bangaluru Mahanagara Palike**
Contractor : **NCC Limited**
Name of Work : Whitetopping Yelahanka from Sheshadripuram First Grade College To Arama Bakery Junction
Location : Chandra Café to Kanti Sweets-LHS & RHS Ch: 0 to 1100
Sample Identification : 8mm, 10mm & 12mm Fe500 TMT Bars
Technical Reference : IS 1786:2008, IS 1608:2005, IS 1599:1985 (Reaffirmed 2006)
Date of test : 12.02.2021

S.No	Brand	Nominal size (dia in mm)	Mass per metre (kg/metre)	TENSILE STRENGTH		
				0.20 % proof stress/ yield stress (N/mm^2)	Tensile strength (N/mm^2)	Elongation, percent on gauge length
1	Fe 500	8	0.388	522	554	17
2	Fe 500	10	0.623	536	574	18
3	Fe 500	12	0.899	542	586	19

Note:
1. The report shall not be reproduced, except in full, without the written approval of the laboratory.
2. The results indicated above are based on the tests carried out on the samples received in the laboratory.
3. Any Query regarding the report must be reported within 15 days from the date of testing.

For CIVIL EXPERTS
Authorised Signature

Reviewed

174, Sri Ranga Complex, Amrutha Nagar Main Road, New Bank Colony, Konanakunte, Bangalore - 560 062.
Mobile : +91 97429 59595 | Tel/Fax : 080 2632 2565 | Email : civilexpertsltd@gmail.com | URL : www.civilexperts.co.in

Scanned by TapScanner

CIVIL XPERTS
ISO 9001:2015
CONSULTANTS & TESTING CENTER

Highway / Building Material Testing | Structural Strengthening Solutions
Quality Control / Assurance / Audit | Proof Checking (Structural Designs & Drawings)
Soil Stabilization and Shoring Services | Non - Destructive Testing

Job No: CECTC/NCC/QC/2020-21 Date: 28.04.2021

TEST REPORT OF PAVER BLOCKS

Name of Client* : **Bruhath Bangalore Mahanagara Palike**
Agency : **NCC Limited**
Name of Work : Whitetopping Yelahanka from Sheshadripuram First Grade College To Aruna Bakery Junction
Location : Chandra Café to Vishnu Park LHS & RHS Ch:0 to 480
Sample Identification : 100mm Thick Paver Blocks
Reference to BIS codes : IS : 15658:2006
Date of Testing : 28.04.2021

Compressive Strength:

SL No.	Area of the sample as worked out (Plan area) (mm^2)	Failure Load (kN)	Correction factor	Compressive strength (N/mm^2)	Apparent Compressive strength (N/mm^2)	Minimum Compressive strength (N/mm^2)
1	28500	1254.0	1.24	44.00	54.56	80
2	28500	1274	1.24	44.70	55.43	
3	28500	1287	1.24	45.16	56.00	

Note:
1. This test report should not be reproduced except in full, without written approval of the laboratory
2. The results indicated above are based on the tests carried out on the samples received in the laboratory.

Asst. Executive Engineer
Yelahanka Zone
Bangalore-92

Reviewed

For CIVIL EXPERTS
Authorised Signature

174, Sri Ranga Complex, Amrutha Nagar Main Road, New Bank Colony, Konanakunte, Bangalore - 560 062.
Mobile : +91 97429 59595 | Tel/Fax : 080 2632 2565 | Email : civilexpertsltd@gmail.com | URL : www.civilexperts.co.in

Scanned by TapScanner

CIVIL XPERTS

ISO 9001:2015

CONSULTANTS & TESTING CENTER

Highway | Building Material Testing | Structural Strengthening Solutions
Quality Control | Bituminous | Soils | Road Cracking Structural Damages & Drainage
Soil Stabilization and Shoring Services | Non - Destructive Testing

Job No: CECTC/NICC/QC/2020-21 Date: 25.06.2021

TEST REPORT OF PAVER BLOCKS

Name of Client : Brahath Bangalore Mahanagara Palike
Agency : NICC Limited
Name of Work : Waterstopping Telahanka from Sandeshpuram Post Grade College To Amma Balaaj Junction
Location : Chandra Café to Vishnu Park LHS & RHS Cloth on 450
Sample Identification : 60mm Thick Paver Blocks
Reference to BIS codes : IS : 15658:2006
Date of Testing : 25.06.2021

Compressive Strength:

Sl.No.	Area of the sample on worked out (Plan area) (mm^2)	Failure Load (kN)	Correction factor	Compressive strength (Kg/Sqm)	Apparent Compressive strength (Kg/Sqm)	Minimum Compressive strength (Kg/Sqm)
1	40000	1142.0	1.00	285.50	285.50	285
2	40000	1153.3	1.00	288.33	288.33	
3	40000	1162	1.00	290.50	290.50	

Note:
1. This test report should not be reproduced except in full, without written approval of the laboratory.
2. The results indicated above are based on the tests carried out on the samples received in the laboratory.

Reviewed

For CIVIL EXPERTS

Authorised Signature

174, Sri Ranga Complex, Amrutha Nagar Main Road, New Bank Colony, Kananakunte, Bangalore - 560 062
Mobile : +91 97429 59595 | Tel/Fax : 080 2632 2565 | Email : civilexpertsltd@gmail.com | URL : www.civilexperts.co.in

Scanned by TapScanner

CIVIL EXPERTS
ISO 9001:2015
CONSULTANTS & TESTING CENTER

Highway / Building Material Testing | Structural Strengthening Solutions
Quality Control / Assurance / Audit | Proof Checking (Structural Designs & Drawings)
Soil Stabilization and Shoring Services | Non - Destructive Testing

Job No.: CECTC/NCC/QC/2020-21 **Date:** 12.06.2021

TEST REPORT OF PAVER BLOCKS

Name of Client*	:	**Bruhath Bangaluru Mahanagara Palike**
Agency	:	**NCC Limitted**
Name of Work	:	Whitetopping Yelahanka from Sheshadripuram First Grade College To Arama Bakery Junction
Location	:	Vishnu Park to Canarabank LHS & RHS Ch:440 to 800
Sample Identification	:	60mm Thick Paver Blocks
Reference to BIS codes	:	IS : 15658:2006
Date of Testing	:	12.06.2021

Compressive Strength:

Sl.No.	Area of the sample as worked out (Plan area) (mm^2)	Failure Load (kN)	Correction factor	Compressive strength (Kg/Sqm)	Apparent Compressive strength (Kg/Sqm)	Minimum Compressive strength (Kg/Sqm)
1	28500	809.4	1.00	284.00	284.00	281
2	28500	811.6	1.00	284.77	284.77	
3	28500	814.4	1.00	285.75	285.75	

Note:
1. This test report should not be reproduced except in full, without written approval of the laboratory
2. The results indicated above are based on the tests carried out on the samples received in the laboratory.
3. Any Query regarding the report must be reported within 15 days from the date of testing.

For CIVIL EXPERTS
Authorised Signature

Asst. Executive Engineer
Project Division
Yelahanka Zone
Bangalore - 92

NCC LIMITED

Infra Support Engineering Consultants
Bangaluru

Reviewed

174, Sri Ranga Complex, Amrutha Nagar Main Road, New Bank Colony, Konanakunte, Bangalore - 560 062.
Mobile : +91 97429 59595 | Tel/Fax : 080 2632 2565 | Email : civilexpertsltd@gmail.com | URL : www.civilexperts.co.in

Scanned by TapScanner

CIVIL XPERTS
ISO 9001:2015
CONSULTANTS & TESTING CENTER

Highway / Building Material Testing | Structural Strengthening Solutions
Quality Control / Assurance / Audit | Proof Checking (Structural Designs & Drawings)
Soil Stabilization and Shoring Services | Non - Destructive Testing

Job No.: CECTC/NCC/QC/2019-20

Date: 15.03.2021

PRECAST SLAB (CORE) TEST REPORT

Client	:	**Bruhath Bangaluru Mahanagara Palike**
Agency	:	NCC Limitted
Name of Work	:	Whitetopping Yelahanka from Sheshadripuram First Grade College To Arama Bakery Junction
Location	:	Chandra Café to Canara Bank LHS & RHS Ch:0 to 1100
No. of Sample Tested	:	03
Date of Testing	:	15.03.2021
Technical Reference	:	IS:516-1959 (Reaffirmed 1999), SP-24:1983.
Grade of Concrete	:	M_{20}

No.	Dia of Core D (mm)	Height of Core H (mm)	Core Wt (Kg)	Density of Core (kg / m^3)	H / D	Correction factor (Based on H/D)	Failure Load (kN)	Core Strength (N/mm^2)	Correction Factor for the Dia. (Strength of the Core x 1.08)	Corrected Cylinder Compressive Strength (N/mm^2)	Equivalent Cube Compressive Strength (N/mm^2)
1	50.00	70.00	0.335	2437.34	1.40	0.960	34.26	17.45	18.84	18.09	22.61
2	50.00	75.00	0.370	2512.53	1.50	0.960	36.21	18.44	19.92	19.12	23.90
3	50.00	65.00	0.325	2546.48	1.30	0.960	37.83	19.27	20.81	19.98	24.97

Note: A B C

1. The report shall not be reproduced, except in full, without the written approval of the laboratory.
2. The results indicated above are based on the tests carried out on the samples received in the laboratory.
3. Any Query regarding the report must be reported reported within 15days from the date of testing.

Executive Engineer
Bangalore-92

For CIVIL EXPERTS
Authorised Signature

Infra Support Engineering Consultants Ltd. Bengaluru

Reviewed

174, Sri Ranga Complex, Amrutha Nagar Main Road, New Bank Colony, Konanakunte, Bangalore - 560 062.
Mobile : +91 97429 59595 | Tel/Fax : 080 2632 2565 | Email : civilexpertsltd@gmail.com | URL : www.civilexperts.co.in

Scanned by TapScanner

CIVIL XPERTS
ISO 9001:2015
CONSULTANTS & TESTING CENTER

Highway / Building Material Testing | Structural Strengthening Solutions
Quality Control / Assurance / Audit | Proof Checking (Structural Designs & Drawings)
Soil Stabilization and Shoring Services | Non - Destructive Testing

Job No.: CIECTC/NCC/QC/2020-21

Date: 15.03.2021

PRECAST SLAB (CORE) TEST REPORT

Client	**Bruhath Bengaluru Mahanagara Palike.**
Agency	**NCC Limited**
Name of Work	Whitetopping Yelahanka from Sheshadripuram First Grade College To Arama Bakery Junction
Location	Chandra Café to Canara Bank- LHS & RHS Ch: 0 to 1100
No.of Sample Tested	03
Date of Testing	15.03.2021
Techinical Reference	IS:516-1959 (Reaffirmed 2018), SP-24:1983.
Grade of Concrete	M_{20}

Sl. No.	Dia of Core D (mm)	Height of Core H (mm)	Core Wt (Kg)	Density of Core (kg / m^3)	H / D	Correction factor (Based on H/D)	Failure Load (kN)	Core Strength (N/mm^2)	Corrected Cylinder Compressive Strength (N/mm^2)	Equivalent Cube Compressive Strength (N/mm^2)
1	100.00	100.00	2.025	2578.31	1.00	0.960	143.60	18.28	17.55	21.94
2	100.00	105.00	2.036	2468.87	1.05	0.960	144.50	18.40	17.66	22.08
3	100.00	110.00	2.074	2400.64	1.10	0.960	150.60	19.17	18.41	23.01

Asst. Executive Engineer
Project Division
Yelahanka Zone
BBMP, Bangalore - 92

For CIVIL EXPERTS
Authorised Signature

Infra Support Engineering Consultants Ltd. Bangalury
Reviewed

174, Sri Ranga Complex, Amrutha Nagar Main Road, New Bank Colony, Konanakunte, Bangalore - 560 062.
Mobile : +91 97429 59595 | Tel/Fax : 080 2632 2565 | Email : civilexpertsltd@gmail.com | URL : www.civilexperts.co.in

Scanned by TapScanner

CIVIL EXPERTS
ISO 9001:2015
CONSULTANTS & TESTING CENTER

Highway / Building Material Testing | Structural Strengthening Solutions
Quality Control / Assurance / Audit | Proof Checking (Structural Designs & Drawings)
Soil Stabilization and Shoring Services | Non - Destructive Testing

Job No.: CECTC-US-QC-2020-21 Date: 20.03.2021

TEST REPORT ON CEMENT CONCRETE BLOCKS

Client : **Bruhath Bengaluru Mahanagara Palike.**
Contractor : **NCC Limited**
Name of Work : Whitetopping Yelahanka from Sheshadripuram First Grade College To Arama Bakery Junction

Reference : Chandra Café to Vishnupark- LHS & RHS
Size of Block : 400mm x 200mm x 200 mm
Cross Sectional Area : 80000 mm^2
Test Method & Specification : IS 2185 (Part 1) - 2005
No. of Blocks Tested : 03

Sl.No.	Date of Sampling	Date of testing	Failure load (KN)	Compressive strength	Minimum required Compressive Strength of Individual Units
			kN	N/mm^2	N/mm^2
1	20.03.2021	20.03.2021	285.6	3.57	3.5
2	20.03.2021	20.03.2021	296.8	3.71	
3	20.03.2021	20.03.2021	287.8	3.60	

Note:
1. The report shall not be reproduced, except in full, without the written approval of the laboratory.
2. The results indicated above are based on the tests carried out on the samples received in the laboratory.

NCC LIMITED BANGALORE

Infra Support Engineering Consultants Pvt. Ltd. Bengaluru

For CIVIL EXPERTS
Authorised Signature

174, Sri Ranga Complex, Amrutha Nagar Main Road, New Bank Colony, Konanakunte, Bangalore - 560 062.
Mobile : +91 97429 59595 | Tel/Fax : 080 2632 2565 | Email : civilexpertsltd@gmail.com | URL : www.civilexperts.co.in

Scanned by TapScanner

CIVIL XPERTS
ISO 9001:2015
CONSULTANTS & TESTING CENTER

Highway / Building Material Testing | Structural Strengthening Solutions
Quality Control / Assurance / Audit | Proof Checking (Structural Designs & Drawings)
Soil Stabilization and Shoring Services | Non - Destructive Testing

JobNo:CECTC/NCC/QC/2020-21

GRADATION FOR GSB (Close Graded)

Date : 23.02.2021

IS : 2720 (Part - 4)

Client : **Bruhath Bengaluru Mahanagara Palike.**

Agency : **NCC Limited**

Name of Work : Whitetopping Yelahanka from Sheshadripuram First Grade College To Arama Bakery Junction

Location : Chandra Café to Canara Bank -LHS Ch:180 to 750

Date of Testing : 23.02.2021

TABLE – 1

Oven Dry Wt (gm) : 14214

Is Sieve Size in mm	Weight Retained (gm)	Cumulative Weight Retained (gm)	Cumulative % of Retained	Cumulative % of Passing	Specified Limits
53	-	-	-	100	100
26.5	2415	2415	16.99	83.01	70-100
9.5	2563	4978	35.02	64.98	50-80
4.75	2415	7393	52.01	47.99	40-65
2.36	1263	8656	60.90	39.10	30-50
0.425	2854	11510	80.98	19.02	15-25
0.075	1968	13478	94.82	5.18	3-10
PAN	736				
Total	14214				

TABLE – 2: Tests on filler screen materials (As per Table : 400-13)

Sl. No.	Particulars	Test Results	Standards as per Specifications
1	Liquid Limit, %	23.60	25.0% Maximum.
2	Plasticity Index, %	Non Plastic	6.0% Maximum.

Remarks: Satisfies MORTH Specifications as per Table 400-2, Grading II

For CIVIL EXPERTS
Authorised Signature

174, Sri Ranga Complex, Amrutha Nagar Main Road, New Bank Colony, Konanakunte, Bangalore - 560 062.
Mobile : +91 97429 59595 | Tel/Fax : 080 2632 2565 | Email : civilexpertsltd@gmail.com | URL : www.civilexperts.co.in

Scanned by TapScanner

CIVIL XPERTS
ISO 9001:2015
CONSULTANTS & TESTING CENTER

Highway / Building Material Testing | Structural Strengthening Solutions
Quality Control / Assurance / Audit | Proof Checking (Structural Designs & Drawings)
Soil Stabilization and Shoring Services | Non - Destructive Testing

JobNo:CECTC/NCC/QC/2020-21

Date : 25.02.2021

GRADATION FOR GSB (Close Graded)

IS : 2720 (Part - 4)

Client : **Bruhath Bengaluru Mahanagara Palike.**

Agency : **NCC Limited**

Name of Work : Whitetopping Yelahanka from Sheshadripuram First Grade College To Arama Bakery Junction

Location : Chandra Café to Canara Bank -LHS Ch:180 to 750

Date of Testing : 25.02.2021

Asst. Executive Engineer
Project Division
BBMP, Bangalore

TABLE

Oven Dry Wt (gm) : 14299

Is Sieve Size in mm	Weight Retained (gm)	Cumulative Weight Retained (gm)	Cumulative % of Retained	Cumulative % of Passing	Specified Limits
53	-	-	-	100	100
26.5	2485	2485	17.38	82.62	70-100
9.5	2563	5048	35.30	64.70	50-80
4.75	2425	7473	52.26	47.74	40-65
2.36	1247	8720	60.98	39.02	30-50
0.425	2869	11589	81.05	18.95	15-25
0.075	1974	13563	94.85	5.15	3-10
PAN	736				
Total	14299				

TABLE – 2: Tests on filler screen materials (As per Table : 400-13)

Sl. No.	Particulars	Test Results	Standards as per Specifications
1	Liquid Limit, %	22.60	25.0% Maximum.
2	Plasticity Index, %	Non Plastic	6.0% Maximum.

Remarks: Satisfies MORTH Specifications as per Table 400-2, Grading II

Support Engineering Consultants Bengaluru

Reveiwed

For CIVIL EXPERTS

Authorised Signature

174, Sri Ranga Complex, Amrutha Nagar Main Road, New Bank Colony, Konanakunte, Bangalore - 560 062.
Mobile : +91 97429 59595 | Tel/Fax : 080 2632 2565 | Email : civilexpertsltd@gmail.com | URL : www.civilexperts.co.in

Scanned by TapScanner

CIVIL XPERTS
ISO 9001:2015
CONSULTANTS & TESTING CENTER

Highway / Building Material Testing | Structural Strengthening Solutions
Quality Control / Assurance / Audit | Proof Checking (Structural Designs & Drawings)
Soil Stabilization and Shoring Services | Non - Destructive Testing

Job No.: CECTC/NCC/QC/2020-21

Date : 27.02.2021

FIELD DENSITY TEST BY SAND REPLACEMENT METHOD
(IS : 2720 - Part 28)

Client Agency : **Bruhath Bengaluru Mahanagara Palike.**
Name of Work : **NCC Limited**
Location : Whitetopping Yelahanka from Sheshadripuram First Grade College To Arama Bakery Junction
Date of Testing : Chandra Café to Canara Bank -LHS-ch:180 to 750 : 27.02.2021
Material Source : Granular Sub Base

Max.Dry Density g/cc	2.27
Optium Moisture Content (%)	6.0
Bulk Density of Sand g/cc(ys)	1.35 g/cc
Wt. of Sand in Cone gms	335grams

Asst. Executive Engineer
Project Division
BBMP, Bangalore - 92

DETERMINATION OF WET DENSITY	
Test Holes No's	1
Chainage/Location,	Chandra Café to Canara Bank -LHS
Wt of the Moist soil from excavated hole = W	2060
Wt.of Cylinder+Sand before pouring (gm) (w1)	6825
Wt.of Sand in the cone (gm) (w2)	335
Wt.of the Cylinder and sandfilling the excavated hole (w4)	5302
Wt of the sand in the excavated hole wb=w1-w4-...2	1188
Volume of Sand in Hole = (v=wb/Ys)=cm^3	880.0
Insitu Bulk density Wet excavated soil Y=w/v	2.34
Moisture Content (%)	4.37
DETERMINATION OF DRY DENSITY	
Field dry Density (g/cc)	2.24
Field compaction achieved (%)	98.8
Required Compaction (%)	98

Reviewed

For CIVIL EXPERTS
Authorised Signature

174, Sri Ranga Complex, Amrutha Nagar Main Road, New Bank Colony, Konanakunte, Bangalore - 560 062.
Mobile : +91 97429 59595 | Tel/Fax : 080 2632 2565 | Email : civilexpertsltd@gmail.com | URL : www.civilexperts.co.in

Scanned by TapScanner

CIVIL XPERTS
ISO 9001:2015
CONSULTANTS & TESTING CENTER

Highway / Building Material Testing | Structural Strengthening Solutions
Quality Control / Assurance / Audit | Proof Checking (Structural Designs & Drawings)
Soil Stabilization and Shoring Services | Non - Destructive Testing

Job No.: CECTC/NCC/QC/2020-21

Date : 01.03.2021

FIELD DENSITY TEST BY SAND REPLACEMENT METHOD
(IS : 2720 - Part 28)

Client : **Bruhath Bengaluru Mahanagara Palike.**
Agency : **NCC Limited**
Name of Work : Whitetopping Yelahanka from Sheshadripuram First Grade College To Arama Bakery Junction
Location : Chandra Café to Canara Bank -LHS-ch:180 to 750
Date of Testing : 01.03.2021
Material Source : Granular Sub Base

Max.Dry Density g/cc	2.27
Optium Moisture Content (%)	6.0
Bulk Density of Sand g/cc(ys)	1.35 g/cc
Wt. of Sand in Cone gms	335grams

DETERMINATION OF WET DENSITY

Test Holes No's	1
Chainage/Location	Chandra Café to Canara Bank -LHS
Wt of the Moist soil from excavated hole = W	2075
Wt.of Cylinder+Sand before pouring (gm) (w1)	6830
Wt.of Sand in the cone (gm) (w2)	335
Wt.of the Cylinder and sandfilling the excavated hole (w4)	5302
Wt of the sand in the excavated hole wb=w1-w4-w2	1193
Volume of Sand in Hole = (v=wb/Ys)=cm^3	883.7
Insitu Bulk density Wet excavated soil Y=w/v	2.35
Moisture Content (%)	4.19

DETERMINATION OF DRY DENSITY

Field dry Density (g/cc)	2.25
Field compaction achieved (%)	99.3
Required Compaction (%)	98

Engineer
Zone
Bangalore - 92

Reviewed

For CIVIL EXPERTS
Authorised Signature

174, Sri Ranga Complex, Amrutha Nagar Main Road, New Bank Colony, Konanakunte, Bangalore - 560 062.
Mobile : +91 97429 59595 | Tel/Fax : 080 2632 2565 | Email : civilexpertsltd@gmail.com | URL : www.civilexperts.co.in

Scanned by TapScanner

CIVIL XPERTS
ISO 9001:2015
CONSULTANTS & TESTING CENTER

Highway / Building Material Testing | Structural Strengthening Solutions
Quality Control / Assurance / Audit | Proof Checking (Structural Designs & Drawings)
Soil Stabilization and Shoring Services | Non - Destructive Testing

Job No.: CECTC/NCC/QC/2021-22

Date : 05.03.2021

GRADATION FOR WMM
MORTH TABLE-400-11

Client : **Bruhath Bangaluru Mahanagara Palike**
Agency : **NCC Limitted**
Name of Work : Whitetopping Yelahanka from Sheshadripuram First Grade College To Arama Bakery Junction
Location : Chandra Café to Canara Bank-LHS Ch:180 to 750
Date of Testing : 05.03.2021
Material Type : Wet Mix Macadam

Oven Dry.Wt 13380

Is Sieve Size in mm	Weight Retained (gm)	Cumulative Weight Retained (gm)	Cumulative % of Retained	Cumulative % of Passing	Spec.Limits
53	0	0	0	100	100
45	463	463	3.5	96.5	95-100
22.4	4325	4788	35.8	64.2	60-80
11.2	2745	7533	56.3	43.7	40-60
4.75	1869	9402	70.3	29.7	25-40
2.36	1475	10877	81.3	18.7	15-30
0.600	1248	12125	90.6	9.4	8-22
0.075	925	13050	97.5	2.5	0-8

Asst. Executive Engineer

Note:
1. The report shall not be reproduced, except in full, without the written approval of the laboratory.
2. The results indicated above are based on the tests carried out on the samples received in the laboratory.

BBMP, Bangalore - 2

Bengaluru

Received

For CIVIL EXPERTS
Authorised Signature

174, Sri Ranga Complex, Amrutha Nagar Main Road, New Bank Colony, Konanakunte, Bangalore - 560 062.
Mobile : +91 97429 59595 | Tel/Fax : 080 2632 2565 | Email : civilexpertsltd@gmail.com | URL : www.civilexperts.co.in

Scanned by TapScanner

CIVIL XPERTS
ISO 9001:2015
CONSULTANTS & TESTING CENTER

Highway / Building Material Testing | Structural Strengthening Solutions
Quality Control / Assurance / Audit | Proof Checking (Structural Designs & Drawings)
Soil Stabilization and Shoring Services | Non - Destructive Testing

Job No.CIRCTC/NCC/QC/2021-22

Date: 05.03.2021

DETERMINATION OF FLAKINESS INDEX & ELONGATION INDEX OF COARSE AGGREGATES

Client	**Bruhath Bangalore Mahanagara Palike**
Agency	**NCC Limitted**
Name of Work	Whitetopping Yelahanka from Sheshadripuram First Grade College To Arama Bakery Junction
Location	Chandra Café to Vishnu Park LHS & RHS Ch:0 to 450
Technical Reference	IS 2386(Part I) 1963 (RA 2007)
Type of Mix	Wet Mix Macadam
Date of Testing	05.03.2021

Result : Flakiness Index = **13.58%**

Elongation Index = **9.65%**

Result : Combined Flakiness & Elongation index **23.23%**

Comments:

→ Maximum allowable Flakiness & Elongation Index for Wet Mix Macadam is 35%

Note:

1.The report shall not be reproduced, except in full, without the written approval of the laboratory.

2.The results indicated above are based on the tests carried out on the samples received in the laboratory.

Asst. Executive Engineer
Yelahanka Zone

Infra Support Engineers Pvt. Ltd. Bengaluru

Rajakumar

For CIVIL EXPERTS

Authorised Signature

174, Sri Ranga Complex, Amrutha Nagar Main Road, New Bank Colony, Konanakunte, Bangalore - 560 062.
Mobile : +91 97429 59595 | Tel/Fax : 080 2632 2565 | Email : civilexpertsltd@gmail.com | URL : www.civilexperts.co.in

Scanned by TapScanner

Date: 04.03.2021

Aggregate Impact Value
IS: 2386 Part IV

Client:	Bruhat Bangalore Mahanagara Palike
Agency:	NCC Limited
Name of Work:	Transporting Vehicles from Shekhadapuram Post Grade College to Uttam Nokia Junction
Location:	Chandra Olive to Canara Bank (NH 48 Ch.180 to 190)
Type of Mix:	Wet Mix macadam
Date of Testing:	03.03.2021

S No.	Details	Trial No. 1	2	3	Average
1	Total weight of aggregate sample filling the cylindrical measure = W_1 g	382	380	385	
2	Weight of aggregate passing 2.36 mm sieve after the test = W_2 g	81	83	83	
3	Weight of aggregate retained 2.36 mm sieve after the test = W_3 g	301	307	302	
4	Aggregate Impact value = percent fines $100*(W_2/W_1)$%	21.20	21.08	21.56	21.28

Comments:

1. Minimum allowable Aggregate Impact value for Wet mix Macadam is 30%

Note:

1. The report shall not be reproduced, except in full, without the written approval of the laboratory.
2. The results indicated above are based on the tests carried out on the samples received in the laboratory

Reviewed

For CIVIL EXPERTS

Authorised Signatories

174, Sri Ranga Complex, Amrutha Nagar Main Road, New Bank Colony, Kononakunte, Bangalore - 56
Mobile : +91 97429 59595 | Tel/Fax : 080 2632 2565 | Email : civilexpertsltd@gmail.com | URL : www.civ

Scanned by TapScanner

CIVIL XPERTS
ISO 9001:2015
CONSULTANTS & TESTING CENTER

Highway / Building Material Testing | Structural Strengthening Solutions
Quality Control / Assurance / Audit | Proof Checking (Structural Designs & Drawings)
Soil Stabilization and Shoring Services | Non - Destructive Testing

Job No.: CECTC/NCC/QC/2021-22

Date 09.03.2021

FIELD DENSITY TEST BY SAND REPLACEMENT METHOD
(IS : 2720 - Part 28)-1974

Name of Client		
Name of Contractor	:	**Bruhath Bengaluru Mahanagara Palike.**
Name of Work	:	**NCC Limited**
	:	Whitetopping Yelahanka from Sheshadripuram First Grade College To Arama Bakery Junction
Date of Testing	:	09.03.2021
Material Source	:	Wet Mix Macadam
	Max.Dry Density g/cc	2.27
	Optium Moisture Content (%)	6.20
	Bulk Density of Sand g/cc(ys)	1.35 g/cc
	Wt. of Sand in Cone gms	335 grams

Asst. Executive Engineer
Yelahanka Zone
BBMP, Bangalore - 92

DETERMINATION OF WET DENSITY

Test Holes No's	1	2
Chainage/Location	Chandra Café to Canara Bank-LHS Ch:180 to 750-	Chandra Café to Canara Bank-LHS Ch:180 to 750-
Wt of the Moist soil from excavated hole = W	2048	2117
Wt.of Cylinder+Sand before pouring (gm) (w1)	7496	7532
Wt.of Sand in the cone (gm) (w2)	335	335
Wt.of the Cylinder and sandfilling the excavated hole (w4)	5992	5984
Wt of the sand in the excavated hole wb=w1-w4-w2	1169	1213
Volume of Sand in Hole = (v=wb/Ys)=cm^3	865.9	898.5
Insitu Bulk density Wet excavated soil Y=w/v	2.37	2.36
Moisture Content (%)	5.50	5.00

DETERMINATION OF DRY DENSITY

Field dry Density (g/cc)	2.24	2.24
Field compaction achieved (%)	98.8	98.9
Required Compaction (%)	98	98

NCC LIMITED ENGINEERING

Infra Support Engineering Consultants Pvt. Ltd. Bengaluru

Reviewed

For CIVIL EXPERTS

Authorised Signature

174, Sri Ranga Complex, Amrutha Nagar Main Road, New Bank Colony, Konanakunte, Bangalore - 560
Mobile : +91 97429 59595 | Tel/Fax : 080 2632 2565 | Email : civilexpertsltd@gmail.com | URL : www.civile

Scanned by TapScanner

CIVIL XPERTS

Oven Dry Wt: 1344

I.S. Sieve Size in mm	Weight Retained (gms)	Cumulative Weight Retained (gms)	Cumulative % of Retained	Cumulative % of Passing	Spec Limits
80	0	0	0	100	100
40	423	423	32	96.8	95-100
20	4365	4788	35.9	64.1	60-80
10	2745	7533	56.4	43.6	40-60
4.75	1880	9413	70.4	29.6	25-40
2.36	1485	10898	81.4	18.6	15-30
1.180	1297	12195	90.8	9.2	8-22
0.075	902	13097	97.5	2.5	0-8

Scanned by TapScanner

CIVIL XPERTS
ISO 9001:2015
CONSULTANTS & TESTING CENTER

Highway / Building Material Testing | Structural Strengthening Solutions
Quality Control / Assurance / Audit | Proof Checking (Structural Designs & Drawings)
Soil Stabilization and Shoring Services | Non - Destructive Testing

Job No.CECTC/NCC/QC/2021-22

Date: 08.03.2021

DETERMINATION OF FLAKINESS INDEX & ELONGATION INDEX OF COARSE AGGREGATES

Client	**Bruhath Bangaluru Mahanagara Palike**
Agency	**NCC Limitted**
Name of Work	Whitetopping Yelahanka from Sbesbadripuram First Grade College To Amma Bakery Junction
Location	Kasturinagar -LHS &RHS-Ch:17252 to 16890
Technical Reference	IS 2386(Part I) 1963 (RA 2007)
Type of Mix	Wet Mix Macadam
Date of Testing	08.03.2021

Result : Flakiness Index = **13.25%**

Elongation Index = **10.03%**

Result : Combined Flakiness & Elongation index **23.28%**

Comments:

→ Maximum allowable Flakiness & Elongation Index for Wet Mix Macadam is 35%

Note:

1.The report shall not be reproduced, except in full, without the written approval of the laboratory.

2.The results indicated above are based on the tests carried out on the samples received in the laboratory.

Asst. Executive Engineer
Project Division
Yelahanka Zone
Bangalore

For CIVIL EXPERTS
Authorised Signatory

174, Sri Ranga Complex, Amrutha Nagar Main Road, New Bank Colony, Kananakunte, Bangalore - 560
Mobile : +91 97429 59595 | Tel/Fax : 080 2632 2565 | Email : civilexpertslhd@gmail.com | URL : www.civile

Scanned by TapScanner

CIVIL XPERTS
ISO 9001:2015
CONSULTANTS & TESTING CENTER

Highway / Building Material Testing | Structural Strengthening Solutions
Quality Control / Assurance / Audit | Proof Checking (Structural Designs & Drawings)
Soil Stabilisation and Shoring Services | Non - Destructive Testing

Job No: CEC/TC/NCC/QC/2021-22

Date: 08.03.2021

Aggregate Impact Value
IS: 2386 Part IV

Client	Bruhath Bangaluru Mahanagara Palike
Agency	NCC Limited
Name of Work	Whitetopping Yelahanka from Sheshadripuram First Grade College To Arasu Bakery Junction
Location	Chandra Café to Canara Bank LHS Ch:180 to 750
Type of Mix	Wet Mix macadam
Date of Testing	08.03.2021

Sl No.	Details	Trial No. 1	2	3	Average
1	Total weight of aggregate sample filling the cylindrical measure = W_1 g	382	389	385	
2	Weight of agregate passing 2.36 mm sieve after the test = W_2 g	82	84	86	
3	Weight of aggregate retained 2.36 mm sieve after the test = W_3 g	300	305	299	
4	Aggregate Impact value = percent fines $100^* (W_2/W_1)\%$	21.47	21.59	22.34	21.80

Comments:

→ Maximum allowable Aggregate Impact value for Wet mix Macadam is 30%

Note:

1. The report shall not be reproduced, except in full, without the written approval of the laboratory.
2. The results indicated above are based on the tests carried out on the samples received in the laboratory

Reviewed

For CIVIL EXPERTS

Authorised Signatory

174, Sri Ranga Complex, Amrutha Nagar Main Road, New Bank Colony, Kananakunte, Bangalore - 560 062.
Mobile : +91 97429 59595 | Tel/Fax : 080 2632 2565 | Email : civilexpertsltd@gmail.com | URL : www.civilexperts.co.in

Scanned by TapScanner

CIVIL XPERTS
ISO 9001:2015
CONSULTANTS & TESTING CENTER

Highway / Building Material Testing | Structural Strengthening Solutions
Quality Control / Assurance / Audit | Proof Checking (Structural Designs & Drawings)
Soil Stabilization and Shoring Services | Non - Destructive Testing

Job No.: CECTC/NCC/QC/2021-22

Date: 11.03.2021

FIELD DENSITY TEST BY SAND REPLACEMENT METHOD
(IS : 2720 - Part 28)-1974

Name of Client	:	Bruhath Bengaluru Mahanagara Palike.
Name of Contractor	:	NCC Limited
Name of Work	:	Whitetopping Yelahanka from Sheshadripuram First Grade College To Aranya Bakery Junction
Date of Testing	:	11.03.2021
Material Source	:	Wet Mix Macadam
		Max.Dry Density g/cc — 2.27
		Optium Moisture Content (%) — 6.20
		Bulk Density of Sand g/cc(ys) — 1.35 g/cc
		Wt. of Sand in Cone gms — 335 grams

Asst. Executive Engineer
Bangalore Electricity Supply Company Limited
Corporate Office

BBMP, Bangalore - 92

DETERMINATION OF WET DENSITY

Test Holes No's	1	2
Chainage/Location	Chandra Café to Canara Bank-LHS Ch:180 to 750	Chandra Café to Canara Bank-LHS Ch:180 to 750
Wt of the Moist soil from excavated hole = W	2032	2116
Wt.of Cylinder+Sand before pouring (gm) (w1)	7490	7334
Wt.of Sand in the cone (gm) (w2)	332	335
Wt.of the Cylinder and sandfilling the excavated hole (w4)	5992	5984
Wt of the sand in the excavated hole wb=w1-w4-w2	1166	1215
Volume of Sand in Hole = (v=wb/Ys)=cm³	863.7	900.0
In-situ Bulk density Wet excavated soil Y=w/v	2.35	2.35
Moisture Content (%)	5.50	5.00

DETERMINATION OF DRY DENSITY

Field dry Density (g/cc)	2.23	2.24
Field compaction achieved (%)	98.2	98.6
Required Compaction (%)	98	98

Engineering Consultancy Services Limited
Bangalore

Reviewed

For CIVIL EXPERTS
Authorised Signature

174, Sri Ranga Complex, Amrutha Nagar Main Road, New Bank Colony, Konanakunte, Bangalore - 560 062.
Mobile : +91 97429 59595 | Tel/Fax : 080 2632 2565 | Email : civilexpertsltd@gmail.com | URL : www.civilexperts.co.in

Scanned by TapScanner

CIVIL EXPERTS

CONSULTANTS & TESTING CENTRE

Date : 18.04.2022

GRADATION FOR WMM
WORTH TABLE 400.11

Client : Brihath Bengaluru Mahanagara Palike

Agency : MCC Limited

Name of Work : Widening & Strengthening of Sheshadripuram First Grade College To Aneema Balcony Junction

Location : Chainage 0.00 to 750m on Path LHS & RHS (Left to Right)

Date of Testing : 18.04.2022

Material Type : Wet Mix Macadam

Oven Dry Wt. : 13469

In Sieve Size in mm	Weight Retained (gm)	Cumulative Weight Retained (gm)	Cumulative % of Retained	Cumulative % of Passing	Spec Limits
53	0	0	0	100	100
45	433	433	3.2	96.8	95-100
22.4	4856	4789	35.6	64.4	60-80
11.2	2748	7537	56.0	44.0	40-60
4.75	1887	9424	70.0	30.0	25-40
2.36	1463	10887	80.8	19.2	15-30
0.600	1289	12176	90.4	9.6	8-22
0.075	963	13139	97.5	2.5	0-8

Note:

1. The report shall not be reproduced, except in full, without the written approval of the laboratory.
2. The results indicated above are based on the tests carried out on the samples received in the laboratory.

For CIVIL EXPERTS

Authorised Signatory

174, Sri Ranga Complex, Amruthe Nagar Main Road, New Bank Colony, Kammanakunte, Bangalore - 560 062.
Mobile : +91 97429 59595 | Tel/Fax : 080 2632 2565 | Email : civilexpertsltd@gmail.com | URL : www.civilexperts.co.in

Scanned by TapScanner